NAEB JOURNAL

MARCH 1959

RADIO: MARVEL OR MONSTER?

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WHICH IS WINNING?

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Radio: Marvel or Monster?

Service, not noise and rattle, makes effective broadcasting

I once owned a radio commercial station, at a time when a 100-word announcement on a 1000-watt station cost 50 cents to a dollar on prime time and people still sat up until the wee hours in the morning to "see if we were coming in" at Grand Island, Nebraska or Nome, Alaska. They could send me a postcard about it, and sitting in Little Rock, Arkansas, I could draw a circle around my service area which would include Nebraska.

As a radio station owner in those early days, I took the federal mandate of "serving public convenience and necessity" quite literally. Probably for lack of a full commercial schedule we went heavy on the so-called "public interest" kinds of of programs, or at least they were programs which we thought the "public should be interested in." We put on some pretty awful programs by some of today's standards. It is rather an amazing thing in the radio business—no matter how lousy you are, there is always someone who listens enough to let you know quite quickly when you have made a serious boo-boo or have stepped over the bounds of what your community thinks a radio station should be or should program. My experience, however, in commercial radio, even though it was elementary and somewhat crude by the sleek, clamorous, and noisy thing we have today, convinced me of the real potential in this medium for genuine education and information on a mass basis.

Just to indicate how long ago this was, and how far I might be behind in this radio business, I bought the station in the closing year of the Hoover administration and operated it through the

By **Stanley Andrews**

Executive Director of the National Project in Agricultural Communications. From an address to the regional meeting of the NAEB at Kellogg Center, East Lansing, Michigan, February 19, 1959.

tumultuous days of the depression and the New Deal to late 1934. Since we were in a predominantly rural state, our public service programs were heavily laced with agricultural subjects, though as I recall, I did broadcast a session of the Arkansas legislature from the floor of the house, thus opening the window, as never before, to the people of Arkansas on just what takes place in a state legislative hall.

One of our agricultural programs came on at 12:15 daily. It was as dry and dreary as anything one could expect to have on the air. It concerned the then new and confusing "Triple A" program in agriculture. And . if any of you remember those early Triple A farm programs, they were quite complicated, especially in areas where you had a fairly large group of farm renters, tenants, share-croppers and direct farm laborers. The law was drawn hopefully so as to protect the rights of all persons down the line in this rather gigantic and awesome effort. This Triple A program was so complicated that I once challenged the late E. M. Spike Evans, one of the early administrators of it, that I'd wager the best hat I could afford to buy if he would himself apply the formula to his own farm. He did not accept the challenge. The men who presented the information over our station did know their subject; they were intensely interested in trying to get their message over to the thousands of farmers, owners, renters, tenants, croppers, and what-have-you in our state. The program ran for several months and I seriously doubted whether we were doing anything or that anybody at all listened.

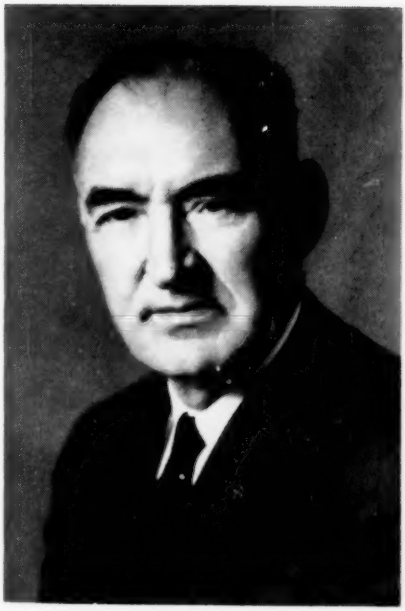
In those days we did not have a Crossley or a Neilsen or a Trendex to fall back on to bolster our judgments—though I take a very dim view of most rating systems. The way we found out that we were maybe hitting something with this program came about quite unexpectedly. The tenant-farmer relations section of the USDA was quite interested in how these AAA programs were working down to the level of the people on the land, and because of the intense pressures of the time they sent out survey teams to talk to tenants and share-croppers and farm owners to see if they knew or had some concept of their rights under this new program. This study came out in a rather exhaustive report; but one section of it deals with a study made in the vicinity of McGhee, Arkansas, among negro share-croppers. The report showed with some surprise on the part of the authors that these tenant farmers, many of whom could not read or write, seemed as familiar with their rights and the provisions of the AAA as the farm owners, and were able to discuss them almost as well. They began to probe around to try to find out why this situation existed. They found, according to the report, that a Little Rock radio station had been broadcasting details of the Triple A program regularly for some time. These negro share-croppers usually

came up to the "big house" during the noon hour to eat their lunches and look after their teams. They "tuned in" on the Little Rock station for Triple A news. That radio station was of course my station. I was rather proud of that small effort and it was a vital lesson to me as a radio operator and more especially if I were dealing with educational matters or presenting information designed to "seek change in people."

That simple principle is that if you have something which hits close to the daily needs, doubts and activities of people and you will present that, rather than what you think they *should* want and need, you'll find that you have an audience on your educational or commercial station. It may not be a BIG BIG audience, and it may not be an audience that will rush the sales counter for the newest toothpaste or cigarette brand, but it will be an audience which accepts and uses the things you have to present.

Here again was something significant for me in those days, namely, that this group of people viewed my radio station as an institution—the radio station—not the announcer or the characters around which many of the successful programs of that day and to some extent today are built.

This led me to believe that a local radio station, especially, could develop a character or a personality as a part of the community and the people which it served, thus making it far more potent as an advertising medium or an educational medium



Stanley Andrews

we depended entirely upon the noise and rattle interspersed with commercials that we often mistake for radio broadcasting.

Up to now I've said very little about either educational radio's future or television's future. Generally speaking I've felt that the universities in the Land-Grant system, and particularly education and agriculture, missed the boat on radio, and only in more recent years have we begun to realize the truly tremendous potential of radio as a tool of education. The service programs for agriculture, both commercial and educational, are quite good, and they tap at least some of the potentials. With the decline of network radio on commercial stations releasing great blocks of time,

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Homework vs. TV: Which Is Winning?

A Minnesota high school checks up on its students

Educators frequently wonder how many hours a day their students spend watching television, they wonder if TV viewing interferes appreciably with Homework, and they also wonder how much better a student's grades could be if he watched TV less.

Among such educators is O. H. Anderson, superintendent of the Mahtomedi, Minnesota, High School. Prompted or nagged by the above and related questions, he put them into a questionnaire, a questionnaire that went to the 430 students enrolled in the Mahtomedi junior and senior high school.

A total of 370 boys and girls—practically all signed their names—dutifully filled out and returned the questionnaire, which asked:

1. How many hours of homework do you do on an average each week, including weekends? Include actual book and written assignments, and anything else such as a particular radio or television program if it is connected with an assignment, or if used as additional work. Do not include anything else, even though it may have educational value.

2. How many hours do you normally spend each week watching television, including weekends?

3. Do you watch Channel 2 Educational TV at home? (This is

By **Luther Weaver**

Parent, PTA member, and teacher of radio and television writing for the Extension Division, University of Minnesota, where he established the first class in radio writing twenty years ago.

Background Information

Mahtomedi is a suburban community on White Bear Lake, fourteen miles out of St. Paul, and a part of Independent Public School District No. 832. The faculty of its high school numbers 25, eight of whom have master's degrees. Its people, the members of its P.T.A., the parents who thrill to the progress of their children or ponder their inability to get ahead in school, make their livings in offices, and stores, and factories in St. Paul and Minneapolis. The population of the district is 5,500; the school population, 1,140. About 50 per cent of the graduates of this district's high school go on to college, a percentage well above the state's average. The high school is fully accredited by the North Central Association of Secondary Schools and Colleges. No school bond issue has ever been defeated in Mahtomedi; in fact, the first one, $800.00 for its first one-room school, set the pattern back in 1891: it carried 14 to 0. (The figures are from the school board, not the Chamber of Commerce.)

Station KTCA-TV, serving the Twin Cities of St. Paul and Minneapolis and surrounding area.)
4. List six of your favorite TV programs in order of preference.

The questionnaires revealed that the average amount of homework done by the 370 students in grades 7-12 inclusive is "5 hours plus" each week, or, obviously, less than 1 hour daily.

At the same time, these 370 students spent an average of 19 hours a week watching television. (All references herein, unless otherwise noted, are to TV as presented by commercial stations, four of which serve this area.)

The amount of homework done each week by the pupils of the six junior-senior high school grades involved ranges from a low of 4 hours in the eighth grade to 6 hours plus in the eleventh grade (see Table A).

The amount of TV viewing each week drops steadily from an average of 25 hours a week for the seventh graders to 12½ hours a week for the seniors of the twelfth grade (see Table B).

Each classification or grade of viewers showed a great range of interest among the scores of programs available every week. In fact, 50 to 75 different programs are mentioned from one to ten times in the questionnaires. These include most of those programs which parents would very likely consider "best" programs for their children.

TABLE A

Hours spent in homework in one week by Mahtomedi High School students

Grade	*No. students*	*Range in hours*	*Average hours a week*
7	78	0 - 15	5
8	54	0 - 15	4
9	61	0 - 12	5½
10	66	0 - 20	6
11	64	0 - 17	6+
12	48	0 - 15	4½

TABLE B

Hours spent watching television in one week by Mahtomedi High School students.

Grade	*Range in hours*	*Average no. hours*
7	0 - 60	25
8	0 - 56	24
9	0 - 62	21
10	0 - 31	17
11	0 - 45	14
12	0 - 42	12½

and also, of course, the other extreme.

The questionnaire asked each student to list in order of preference six of his (or her) favorite TV programs. However, only the first five "favorite" programs were tabulated. Favorite program No. 1 is backed up by ballots from one-third to one-half the "voters" in each grade. And what type of program leads in this first choice? Westerns five to one, in grade-by-grade voting. Tenth graders, however, did not follow the prevailing pattern: their first choice was American Bandstand—and if you're so square you don't dig what American Band-

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Eternal Vigilance Necessary

Viewers and listeners to broadcasts have felt some measure of protection from commercial interests in the procedures established by the Federal Communications Commission under the Communications Act of 1934 as amended. Some may recall an FCC publication titled "Public Service Responsibility of Broadcast Licensees" and issued March 7, 1946. This publication, often referred to as "The Blue Book," spelled out explicitly the role of the Commission in making sure that all members of the broadcasting industry used in the public interest the scarce broadcast frequencies which belong to the people.

The forms currently used in applying for or seeking renewal of a broadcast license require a statement of program proposals and program practices. The replies to these questions provide the FCC with the data essential to making a determination of whether the applicant proposes to serve or has in the past served the public interest insofar as programs are concerned.

Recently (on November 24, 1958) the FCC proposed certain changes in its broadcast forms with respect to the Statement of Program Service, with a view to shortening and clarifying the required forms.

To this proposal Commissioner T. A. M. Craven filed a detailed six-page dissent. He contends, to state it briefly, that "The Commission should discontinue using program proposals as one of the criteria on which it bases its approval or disapproval of an application for a broadcast permit or renewal of a license."

Were the proposal of Commissioner Craven to be adopted by the FCC, the listener and viewer would, in the opinion of the writer, suffer the loss of any protection he has enjoyed in the past from broadcasters who, all too often, carry sustaining programs, local live programs and programs devoted to the discussion of public issues, and likewise refrain from advertising excesses, only because of a fear that not doing so may jeopardize their chances of securing favorable action the next time their license comes up for renewal.

It appears that Commissioner Craven's proposal is not likely to be concurred in by other FCC Commissioners when the Proposed Rule Making comes up for final action later this spring. However, there will always be pressure from certain broadcasting interests to eliminate this last vestige of protection to the audience which the FCC presently exercises. Listeners, and especially those of us who represent the teaching profession, must continue to use every means at their disposal to prevent such a catastrophe.

—Tracy F. Tyler, *Editor*

Book Review

Television and Radio Announcing, by Stuart W. Hyde. New York: Houghton Mifflin Co., 1959. 451 pp., $6.00.

To those acquainted with the standard works in the field, it will be no surprise that Stuart Hyde, like the others, defines the role of the broadcasting announcer with such breadth as to strain the definition of "announcer" to its breaking point. He notes a spectrum of activity that includes practically all performance behavior in broadcasting, confident that somewhere within the vast area of his definition will be found enough elements to please any particular instructor. As he says, ". . . the author has attempted to set down as much material in as many areas of announcing as is possible."

The result, predictably, is more a spraying of "many areas" than it is a thorough soaking of any one of them with "much material." Certain chapters, of course, hit the mark better than others, and nearly all possible chapters are to be found. But the dimension of coverage is so broad that specialists—particularly in news, sports, voice and diction, and oral interpretation—would find Hyde's chapters on these subjects far from adequate.

True, there are many special areas that have an "announcer's slant" to them; and when Hyde focuses upon them this way, they seem quite successful. His presentation of the International Phonetic Alphabet, for example, (and a related handy chapter on the chief European Language pronunciations), are excellent jobs of scaling down highly complex areas to their most useful essentials for announcers. Too, he offers a treatment of the technical aspects of the media that may well serve many an announcer for reference in time of need.

However, none of the areas just mentioned is unique to the announcer. The reader, then, expecting a virtuoso treatment of that which is classically associated with announcing—handling of commercials, disc-jockey work, and interviewing—will find this text not much of an advancement in the field.

The book differs in size from several of the older announcing

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Projects and Products

a monthly column

by

Philip Lewis

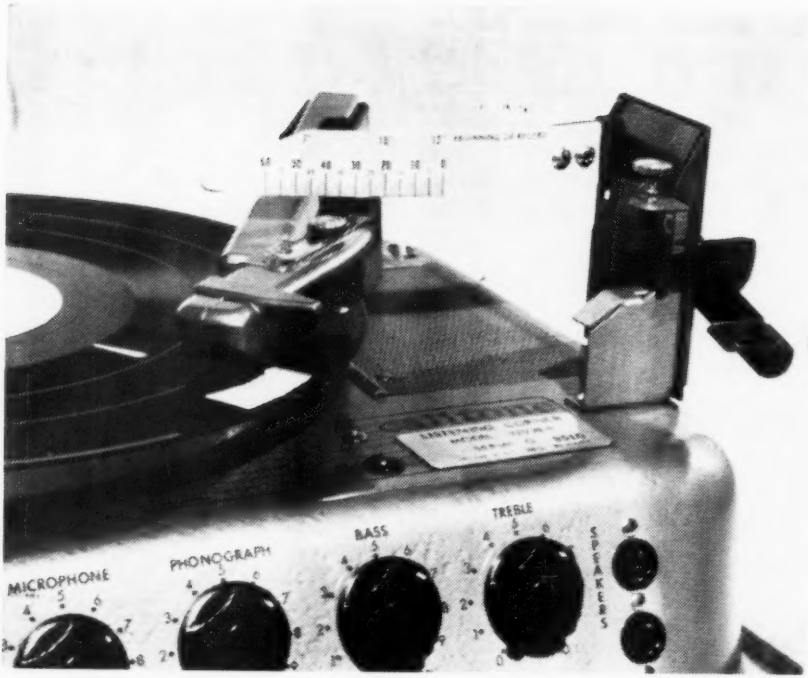
Director, Bureau of Instruction Materials, Board of Education, Chicago

VIDEO TAPE AT A PRICE YOU CAN AFFORD

Although still in the experimental stage, it has been reported that a prototype video tape machine designed by RCA to sell in the neighborhood of $10,000 has been successfully demonstrated at a recent conference. When fully developed and in production, this product may well prove to be one of the most provocative breakthroughs to the general and widespread use of instructional television in schools and institutions at all levels of endeavor.

The device is packaged as two associated units resembling suitcases, and can be carried by one person. In addition, the magnetic tape employed is of the narrow variety and should be considerably less costly than the 2" width tape used with the professional-type machines. The quality of recording and reproduction is expected to be somewhat less than that of the higher-priced, conventional counterpart. However, performance should be quite satisfactory for all applications other than those requiring commercial broadcast standards.

The first year *Report on the National Program in the Use of Television in the Public Schools*, just released by the Fund for the Advancement of Education, includes frequent mention that the problem of reconciling instructional schedules of cooperating schools with the reception of telecasts is a very formidable one. It would seem that with the perfection of the inexpensive (as compared to the $45,000 professional counterpart) video tape recorder, a reasonable solution is at hand that will at the same time provide additional possibilities for greater exploitation of the television potential.



NEW RECORD CUEING DEVICE

An accessory just released by the Califone Corporation provides an inexpensive method of record "spotting." With this device attached to a wrist-action type pickup arm, it is possible to control accurately the placement of the needle on the record. The needle can be gently raised and lowered without handling either the arm or the pickup head by manipulation of a convenient two-lever push-button device. Accidental damage, common in manual record playing, is entirely eliminated. Using the Cuemaster, it is possible to select the grooves of a record as if they were pages in a book. Any portion of the record may be preselected and played when desired, or a record being played may be interrupted and re-started at the exact point of interruption.

For purposes of standardization, a uniform scale has been es-

tablished so that a programming chart can be employed. Copies of these printed charts may be used for pre-planning record programming, or for logging specific passages within a recording which is being played.

The Cuemaster is priced at $12.50 if ordered separately, or sells for $10.00 if ordered to be factory installed on a new Califone. Additional details may be had by writing to 1041 N. Sycamore Avenue, Hollywood 38, California.

simultaneously with the picture.

No supplementary lighting is required, and the controls are exceedingly simple to master—an operator becomes expert in minutes. A special monitoring unit is provided to observe transmissions. The 600 line resolution capability is adequate for high definition purposes, and the character of the device makes it possible to adapt almost all overhead projector techniques. Suggested applications include TV instruction and remote data transfer processes. Literature may be requested from Television Utilities Corporation, Corona 68, Long Island, New York.

THE SCAN-A-GRAPH TV PICKUP

Completely housed in an office desk, this facility is capable of picking up images from any transparencies that will fit into an 8½" x 11" area and converting them into electronic signals for distribution over a closed-circuit system. Slides, 16mm frames, and handwritten or typed copy on transparent or translucent sheets may be employed to provide complete flexibility of application. The material can be prepared in advance, or may be developed while writing or sketching on the Scan-A-Graph pickup stage. If desired, audio accessories can be provided as auxiliary equipment so that voice may be transmitted

ETV Considerations for School Board Members

[*Editor's Note:*

A memo to Board Members and the Tri-County ETV Council, written by Lloyd Morris, discusses the possibilities and challenges of television as an electronic aid to education.

The Tri-County ETV Council, nurtured by the northern division of the Illinois Association of School Boards, supports an experimental over-the-air TV workshop for teachers in a nine-county area in Chicago and N.E. Illinois.

The author, Lloyd Morris, is an elementary school board member in Elmwood Park, Illinois. He has been active for many years in educational affairs at both the local and state level, and has worked to provide better information to board members on promising aids to education.

Since this Memo is as yet unpublished, and is too long to be used in its present form in the Journal, *it has been high-lighted in the present digest by Devere Logan, a graduate assistant in Journalism and Communications at the University of Illinois.*]

In his preface, Mr. Morris explains the implications of ETV. Stating that board members are duty bound to be ever alert to new tools and research to improve the quality as well as the quantity of education, he cites ETV as an aid to be investigated. The need for this report, according to Mr. Morris, is that ETV stations seem to be doing little to communicate their accomplishments, problems, and potential. He further states that if we are to get more support for education we must do more than perpetuate the existing order of things. ETV may be a significant part of the solution for shrinking facilities, teacher shortages, and lack of funds by changing the entire concept of traditional educational methods, a change that may soon see students' time in schools reduced by one-half.

ETV is presented here as a possible means to avert the "crisis in education" which will occur unless we improve upon traditional facilities and methods.

In section 1.000 of his memo, Mr. Morris defines Educational Television as education by means of a new and powerful communications device for all levels, ages, and interests, in-school or at home, where the major objective is educational rather than entertaining. He further states that it may occur

on noncommercial stations, and here some would suggest that ETV not be placed in commercial station context.

Programs presented over the air for conventional reception are referred to as open circuit, while those sent over cables only, and not normally available to the public, are termed closed circuit. The memo points out that there are over 250 ETV channels on reserve, of which 35 are operating. To those who say that ETV is just a mechanical gadget, and not significant educationally, the textbook is mentioned as a similar one-way means of communication. Yet until now it has been considered the greatest aid to education.

Citing specific aims and potentials of ETV, Dr. C. H. Faust is referred to in pointing to areas where it can be a tremendous aid: to enlarge the scope of teachers and to raise their salary ceilings, to muster more effectively our educational resources, to accomplish future tasks and to improve the quality of education.

Characteristics of TV, as reported by the U.S. Office of Education: 1) immediacy, 2) low cost of coverage, 3) front seat view, 4) ease of film reproduction, 5) ability to induce mental participation, 6) photographic extension of the visual sense, 7) intimate contact with greatest living teachers, 8) thrift of using one set of apparatus for many pupils, 9) close relation to texts, following courses at home, and 10) power to visual aids and presentations.

ETV is suggested as a possible factor in relieving the critical shortage of a quarter-million teachers by 1965. Morris states that board members have the responsibility to give active consideration to any possible improvements which might avert this crisis.

Section 2.000 of the report deals with the accomplishments of educational television. Significantly, the first section deals with a statement by Charles Siepmann on ETV. He says: ". . . I have travelled widely and observed many of these experiments in action . . . something is going on here of revolutionary significance to the future of education in this country."

Examples of experiments mentioned include use of television in schools of medicine, universities, urban and rural school systems, and co-ordinated communities. Specific instances of ETV's effective use included Pennsylvania State University and its 15 000 student hours of courses which led to the conclusion that there is no significant difference between ETV and traditional classroom methods and procedures. One national experiment in ETV involves more than 50,000 students, half in regular classes as a control group. This study, supported by boards of education, must be watched carefully by other boards of education.

Television's contribution to learning has been proved most significant in almost all areas of youth and adult education. Learning, like other forms of cultural, sociological, and economic product distri-

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Can TV Improve College Teaching?

Penn State study compares two methods of instruction

By **John P. Driscoll**

Assistant Professor of Education, The Pennsylvania State University.

At one of higher education's largest closed-circuit installations, The Pennsylvania State University, serious effort is being made to improve television teaching in many fields. Most colleges and universities offer a course such as "Introduction to Public Education," "The American School System" "Principles of Public Education," etc. Recently at Penn State a controlled study was undertaken with a view to comparing straight lecture techniques with visualized television teaching in such a beginning course. In the same study, the visualized method was tested to determine its comparative effectiveness in both large and small groups.

A control group of 146 students, composed of five separate classes, was taught by conventional non-visual methods. The experimental group, including a number approximately equal to the control group, was divided at random into a small and a large group, numbering 24 and 123 respectively.

Because of the very slight difference in grade-point average between control and experimental groups, it was deemed unnecessary to make an analysis of co-variance in the statistical procedures.

The large experimental group was taught twice a week by illustrated lecture technique, utilizing closed-circuit television, with both camera and receivers in the room occupied by the instructor and students. The students in the large experimental group were able to watch the instructor and the television screen. The small experimental group was given the same material two days per week. Both large and small experimental groups met together one day per week for additional direct motion picture presentations.

All groups were given a pre-test and a post-test on material treated in the Introduction to Education course. Factual learning was also determined by an original

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Series I: The Effectiveness of Television as a Teaching Tool

57. The Detroit Television Teaching Project: Report for the Year 1957-58

By Elmer F. Pflieger, Detroit Public Schools, Detroit, Michigan, 51 pages, mimeo.

The Detroit Public School system is one of thirteen project-units participating in the National Program for the Use of Television in the Schools sponsored by the Fund for the Advancement of Education. The expenses for this research study were shared jointly by the FAE and the Detroit Board of Education.

Involved in the project during the first year were nine experimental schools (three elementary, three junior high, and three senior high) and twenty control schools. Each of the experimental schools had two large classes in the research project which met in auditoriums, lunchrooms, and study halls. Each of these rooms had five to eight television receivers with about 30 pupils grouped around each set. All of the control classes were normal-size classes taught in the conventional way without the aid of television.

The six courses in the Television Teaching Project were:

1. Conversational Spanish (Grade 3)
2. Science (Grade 5)
3. Health (Grade 5)
4. Science (Grade 8)
5. World History (Grade 9)
6. American Literature (Grade 11).

Each of these is a course in the regular instructional program of the schools with the exception of the third-grade course in Spanish. This course was included to explore the possibility of expanding the school program to an area not readily available to elementary school children.

All of the telecasts were 30 minutes in length. The class periods varied in length from 40 to 55 minutes, giving the teachers from 10 to 25 minutes before or after the telecast.

The "on-camera" teachers for the television courses are regular classroom teachers from the Detroit schools. Although they had had no previous experience with television teaching, they were selected on the basis of their knowledge of subject matter and "telegenic" personalities. Each large class also had two teachers in the classroom who had the responsibility for carrying on discussion sessions, giving and correcting tests, individual guidance, grading, etc.

The courses were presented over the UHF channel 56, WTVS, the educational television station operated by the Detroit Educational Television Foundation. The lessons were produced by the Department of Radio-TV Education of the Detroit Public Schools.

The evaluation program of the project involved a "before" and "after" testing program for students in both the experimental and the control schools, using various standardized subject matter tests and also portions of the Listening Tests in the Sequential Tests of Educational Progress.

The evaluation platform of the National Program contains these two statements:

> "No final conclusions should be drawn on the basis of the first year of the experiment."
>
> "However, enough objective data concerning the value of TV instruction of large classes should be assembled during the school year 1957-58 to indicate to the participating school systems whether or not important values are likely to result from continuing the experiment two more years."

In keeping with the spirit of this platform, the report states, "It is not intended that the statements in this and succeeding sections be looked upon as definite conclusions. These are rather to be viewed as tentative findings which may be substantiated, refuted, or altered in the light of future research."

General Conclusions:

1. Pupils in the television classes learned as much subject matter as children in the control classes and in a number of instances the experimental classes did significantly better in-

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NAEB Research Fact Sheets

Series I: The Effectiveness of Television as a Teaching Tool

58. Television: Its Effectiveness in Ninth-Grade Science Teaching

By V. Anthony Champa, Audio-Visual Communication Review, *Summer 1958, Vol. 6, No. 3, pp. 200-203*

This investigation was planned to explore the potential of television in helping ninth-grade pupils learn more science as well as predisposing them to pursue further study in science with a view to making a career in the field.

Three groups of ninth-grade science pupils from the two junior high schools of Lancaster, Pennsylvania, were used in this experiment. The number of boys and girls in each group was evenly divided. Since matching groups was not possible, they were equated statistically on the bases of a pretest, mental age, and attendance record. The three groups were:

1. conventional instruction,
2. television group in which 30 minutes of class time was devoted to television instruction,
3. motion picture group in which 30 minutes of class time was devoted to filmed instruction.

Results and Conclusions

In achievement, the TV group did best among the boys and the motion picture group did best among the girls. None of the differences was of statistical significance, however.

Pupils favored the use of telecasts and motion pictures almost unanimously. In addition, a greater proportion of all the pupils in the

experiment were found to be pursuing the study of more science one year after the experiment was terminated than had been the case with previous classes. Pupils who were in the television and motion picture groups were slightly higher in their persistence in studying more science.

The cooperating teachers recognized value in both telecasts and motion pictures. They felt that television, as used in this experiment, did not unduly regiment their teaching.

Suggestions for Further Study

1. Would a greater difference in learning accrue if this experiment were repeated with more class time devoted to teaching by television? If so, is there a point of diminishing returns in learning as the proportion of class time utilized for teaching by television is increased?

2. Does the proportion of class time utilized for teaching by television affect pupil reaction to teaching by television?

3. Would kinescopes of the telecasts be valuable for review?

4. Would elaborate, professionally programmed and produced teaching telecasts be superior to educational telecasts primarily concerned with a good teaching preparation?

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NAEB Research Fact Sheets

Series I: The Effectiveness of Television as a Teaching Tool

59. Teacher A-V Education via Closed-Circuit Television

By G. M. Torkelson, Audio-Visual Communication Review, *Summer 1958, Vol. 6, No. 3, pp. 189-199.*

The purpose of this report is to record student and instructor reactions to closed-circuit portions of a basic audio-visual course taught during the spring semester, 1957, at the Pennsylvania State University. This investigation was not designed to analyze the reactions of matched groups by statistical methods but to explore through questionnaires and subjective judgments problems arising from teaching portions of an audio-visual course to advanced teacher-trainees.

One common hour for television was held during which 130 members of the audio-visual course assembled as a large group or as four sections in separate viewing rooms. During the ensuing week, the students met in eight smaller groups, ranging in size from a dozen or so to about 25 members per section. Four types of arrangements were used in the television presentations:

1. Large lecture hall—instructor and TV camera present.
2. Large lecture hall—instructor remote.
3. Small viewing rooms—instructor remote.
4. Large lecture hall—instructor present; TV remote.

Forms were provided at the beginning of each television session for recording student reactions to the applicability of content to their

interests, the materials used during the presentations, and the methods employed. Space was provided on the reaction sheets for additional comments.

Items and Responses in Final Questionnaire.

1. Seventy-eight percent of the students had participated in one television course or none prior to the audio-visual course. Of these, 34 percent had an unfavorable reaction to the previous course, and 45 percent had a favorable reaction.

2. Sixty-two percent of the group said they would avoid enrolling in a television course if they had a choice. The reason most commonly given was a feeling of dislike for "impersonal, mass-production education."

3. Sixty-eight percent of the group felt that the television portion was of some value in learning about audio-visual materials and methods.

4. If audio-visual courses of the future were to be presented on television, the following techniques were favored in the order listed as most adaptable to television presentation:

a. use of models in teaching.
b. presentation of graphs, felt-board, cartoons.
c. process of evaluating motion pictures.
d. demonstration technique.
e. field trip preparation—discussion.
f. still picture utilization.

Least favored was the lecture-discussion type of presentation. This was substantiated by a later question which asked which method of presentation was liked least. Lecture presentations were mentioned most frequently as least liked.

5. Almost two-thirds of the group would have preferred a "no television" arrangement, i.e., conventional instruction, to any size of lecture class where television was present.

6. Almost two-thirds of the group, if they had to view television as part of a course, preferred viewing in small rooms. The reason given most frequently for this choice was that this arrangement was like the more intimate classroom atmosphere.

7. Eighty-seven percent of the students did not believe that upper level courses should be taught by television. The great majority of these felt that upper level courses required discussion and the more individualized teaching precluded by television.

8. Eighty-one percent of the students felt that television teaching requires more "gimmicks" to maintain the interest level than are required in a face-to-face session with the instructor.

9. Almost two-thirds of the group felt that the absence of color in the television presentations affected adversely their receptiveness to what was presented.

From the experiences reported here, the author lists the following as areas for further investigation:

1. How does one determine the

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NAEB Research Fact Sheets

Series I: The Effectiveness of Television as a Teaching Tool

60. Experiments in Teaching Effectiveness Applied to Introductory Sociology

By Vernon Davies, Edward Gross and James F. Short, Department of Sociology, State College of Washington, August 1, 1958, 74 pages.

This monograph is a report of one of the "utilization" projects sponsored by the Fund for the Advancement of Education. These projects were designed to encourage exploration of new teaching methods and procedures to meet the growing problem of overcrowded schools. This report deals with a two-year program involving three separate experiments in the teaching and learning of the Introductory Sociology course at the State College of Washington.

Experiment 1

Experiment 1 took place during the Fall Semester of 1956-57. All first-semester freshmen, enrolling in Sociology 101, were the subjects. The instructor alternated in teaching three different-sized sections. Before-and-after achievement tests were provided for each instructor for each segment of the course. In addition, a rating scale, measuring student attitude to each instructor, was distributed at the close of each segment. Some open-end questions were also asked.

Results:

1. There was no support for the view that class size and student achievement are related—at least insofar as the groups studied were concerned. The author cautions that they might have used an even larger group of students than their large class. The fact that they did not do so makes it impossible to generalize about extremely large groups. (The three section sizes used were 18, 35, and 71 persons

per class).

2. Student evaluation of teacher performance seems to be related to class size although not in a linear fashion. The small group was consistently more favorable toward the instructors than was the medium or large group. This may be partially explained by the fact that the medium-sized group considered themselves as a "normal" class, whereas the small group were very much aware of being a unique experimental group. This is similar to the reported industrial studies in which the experimental group tries to give the instructor the expected attitudes because of their consciousness of being singled out for special attention.

Experiment 2

The size of the group was held constant at 20. Each instructor taught by three techniques—lecturing, visual-aids, and closed-circuit television—to each group in turn. Achievement and attitude tests were administered as in Experiment 1.

Results:

1. Teaching technique was not found to be related to student achievement.

2. It appears that the classes developed a "set" toward the experiment which influenced their ratings of instructors. For example, one section developed a negative feeling towards the experiment which manifested itself in consistently low ratings of instructors, regardless of technique of instruction.

Experiment 3

Each of the three instructors taught one experimental group and one control group, with students randomly assigned to each group from matched pairs in which the matching was based on a preliminary test. Each instructor taught his experimental group with the reading-quiz method and his control group by a combination of lecturing and audio-visual aids. Achievement and attitude measurements were the same as used previously.

Results:

The results lend support to the view that formal lecturing contact may be entirely eliminated without loss of achievement of course content or change in attitudes to instructor, test, text, or course. The authors modify this broad statement by stating that they are "unable to say to what extent this finding may be attributed to the elimination of lecturing or to other major changes . . . made—reduction in sheer time itself (meeting only one hour a week) the use of continuous quizzing, or the addition of outside readings. Probably all four changes were influential".

An excellent summation of the philosophy pervading this report is given in the following paragraph:

"Our experiment is no argument for the elimination of the instructor. Rather, it argues for the focusing of the instructor's time and attention on activities that require an educated man. Using him to give the same lectures over and over again (a tape recorder might do better

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NAEB Research Fact Sheets

Series I: The Effectiveness of Television as a Teaching Tool

61. Evaluation Report for the 1957-58 School Year

By Robert R. Suchy and Paul C. Baumann, The Educational Television Project, Division of Curriculum and Instruction, Milwaukee Public Schools, Milwaukee, Wisconsin, September, 1958, 51 pages.

The Milwaukee Public Schools have been active in telecasting programs of an informative nature to the community for a number of years. They have now embarked on an experimental program using television as an instructional tool in large classes. The operating costs of the experiment were shared by the Milwaukee Public Schools and the Fund for the Advancement of Education.

Milwaukee's objectives in the experiment were outlined in a memorandum as follows:

1. To determine whether or not it is possible, through the use of television as a teaching aid, to teach certain areas of the curriculum effectively to pupils organized in much larger groups than is presently the case.

2. To determine whether or not it is possible to raise still further the level of teacher effectiveness through the use of television as a teaching aid.

3. To determine whether or not television as a teaching aid can be integrated with the instructional program at all levels.

The subjects in which television was used were:

1. biology and history at the high school level,

2. general science and social studies at the junior high school level,

3. an integrated program of science, health and safety at the elementary school level.

In each of the junior and senior

high schools, there was a single television class for each subject offered. Two classroom teachers were responsible for the classroom instruction in this large class of about two hundred students, and, in addition, each of these teachers had two other regular class assignments. In the elementary schools the basic structure of the self-contained classroom was maintained. However, six of the classroom teachers in each of the schools combined their classes for thirty minutes a day for the instruction in science, health and safety.

The experiment used the facilities of WMVS-TV, a 128,000 watt VHF station, owned and operated by the Milwaukee Vocational and Adult Schools.

Because of certain limitations, it was decided to use group data as opposed to matched pairs. A verbal-type intelligence test was given to both the control and experimental groups to show, within the limits of the test, the similarity between the experimental and comparison groups in each subject. A pre-test and post-test were also administered in subject achievement. The pupils were placed in either the experimental group or the comparison group on a random basis.

In addition, a free response questionnaire was sent to all teachers. Before mentioning the findings of this report, it seems worthwhile to mention some of the comments—pro and con—made by the teachers in this subjective evaluation of the teaching experiment:

"More science was taught by TV than in an ordinary class."—

"Some students manage to hide in numbers. Many students do not prepare their lessons prior to the telecast and, as a result, do not gain as much as they should therefrom."

"I noticed that some of the slow learners had gained enough confidence to take an active part in the large group."

"Lack of repetition denies the slow learners the chance to recognize solutions."

"It certainly fostered in the children a genuine interest in the study of science, health, and safety."

"Many had become bored with it (TV) because of the sameness day after day."

Summary and Indications

1. The pupils in both groups achieved very well in all areas.

2. Though the achievement of the U. S. History experimental groups seemed to be greater than that of the pupils taught in the comparison groups, this greater achievement may be caused by uncontrolled variables in the experiment and not the method of instruction. However, all the data strongly indicated that pupils in the television sections achieved as well as those in regular groups.

3. There were indications that there was no appreciable difference in achievement between comparable segments, such as fast learners or slow learners, of the two groups.

4. The pupils in the television sections had a wider range of ex-

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Series I: The Effectiveness of Television as a Teaching Tool

62. Television Teaching: Conventional Lecture Versus Highly Visualized Film Presentation

By John V. Irvin and Arnold E. Aronson, University of Wisconsin Television Laboratory, Bulletin No. 11, Madison, Wisconsin, December, 1958, 29 pages.

The primary purpose of this study was to compare the relative teaching effectiveness of two methods of instruction: (1) live lecture, and (2) a highly visualized film presentation, in television teaching at the college level. Results were evaluated both by a conventional true-false examination and by a highly visualized film test in which the materials presented in the experiment reappear in relatively nonstructured situations. A secondary purpose of this study was to compare the effects of two conditions of instruction: (1) the class in the studio with the instructor, and (2) the class in a monitor room viewing the instruction as presented via closed-circuit TV.

This study was made possible by a grant from the Mass Communications Research Committee of the University of Wisconsin. It was conducted the last two weeks of the semester on thirty-seven students, all of whom were enrolled in an introductory course in speech correction. At the time of the first class meeting, the members were randomly assigned to two groups: the studio group and the monitor group. In order to avoid the effect of previous contact with the regular teacher of the class and in order also to minimize any possible difference in teacher ability or attitude, it was decided to use one new teacher in the presentation of both the lectures and the films. This individual did not appear before the class except as part of the experimental proceedings. It is

also believed, within the limits of the resources available, that both the lecturers and the films represented adequate samples of their respective types of instruction. The results were analyzed with the analysis-of-variance technique and take up a large part of the body of the report.

Based on this analysis, the authors found that the method of testing affects the apparent efficiency of the method of teaching. In film testing, film teaching appears to be the more efficient; in verbal testing, verbal teaching appears to be more efficient. This finding may help to account for much previous research which has failed to find any difference in the relative efficiency of the two techniques. The results also indicate that irrespective of whether a verbal type of examination or a film type of examination is employed, and irrespective of whether a highly visualized film type of teaching or a lecture type of teaching is employed, it is not significant whether the student is present in the studio or in the monitor room.

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NAEB Research Fact Sheets

Series VI: Impact

10. Attitude Change and Learning as a Function of Prestige of Instructor and Mode of Presentation

By Hideya Kumata, Communications Research Center, College of Communication Arts, Michigan State University, East Lansing, Michigan, 1958, 105 pages, eight appendices.

This report gives the results of two studies in instructional closed-circuit television. The first study, the Social Science Project, involves part of a basic course in social science at the college level. This study was conducted during the final or spring term of 1957. The main independent variables are mode of presentation (television and face-to-face) and prestige of the instructor (national expert, departmental expert, and ordinary instructor). The main dependent variables are attitude change toward subject matter content, attitude change toward teaching by television, and information gain. The topic chosen was that of Power Politics, presented from a script written by one of the instructors. This script was screened by others and also by the ETRC, who supported this study in part with a grant-in-aid. A total of 764 students enrolled in 18 sections of the course were used as experimental subjects; an additional two sections were used as the control. The assumed levels of prestige of the instructors were announced and emphasized in each class.

The second study, the Advertising Project, chiefly emphasized information gain with a secondary

interest in attitude change toward the concept of advertising. An unusual feature of this course was its dependence on a large amount of visual material to illustrate teaching points. This study was conducted during the fall term of 1957-58. One section was used as a control and the other section became the experimental group. In this course, none of the students knew that the course would be televised until the first day of class.

In his concise review of literature, the author subtly states an underlying question in this study. Have the research studies to date really attempted fairly to evaluate ETV, or have they merely tried to reinforce the "proponents of television who have been quite vocal in pushing the use of television as a total or partial solution to pressing educational problems"?

After a lengthy, detailed and probing analysis of the data, the author arrived at the following conclusions, some of which are in direct opposition to the majority of recent ETV research findings:

1. Television students do poorer work than face-to-face or conventionally taught students on learning. This was true in the one-shot Social Science Project and in the term-long Advertising Project.

2. Television-taught students change in their course-related attitudes, but this change is no greater in magnitude than that in conventionally taught students.

3. The findings on prestige effects in this study are mixed. This is partially the result perhaps of non-equal steps between increments of experimenter assigned prestige.

4. No novelty effect seems to be operating for first instructional TV exposure subjects when these are compared with subjects who have had a course in the same department over television. Prior TV students are significantly more favorable towards teaching by television than first exposure students.

5. No support is found for the thesis that low ability students do better when taught by TV than when taught in a conventional situation.

6. There is very little sheer mode effect (television vs. face-to-face). Mode effects are significant in interaction with other variables, in this study primarily with the variable of perceived prestige.

Since these findings are at odds with the large body of ETV research, the author's own suggestion has merit. "A great many gaps exist in our knowledge of the use of television for instructional purposes. While we cannot expect to fill all these gaps in time to help harried administrators make decisions concerning television, we can make some start by concentrating on those areas which seem to be in the most need of research."

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NAEB Research Fact Sheets

Series VI: Impact

11. An Investigation of Some Aspects of the Social Psychological Impact of an Educational Television Program

By James J. Asher and Richard I. Evans, University of Houston, Houston, Texas, July 15, 1958.

Typical reports of ETV research studies have investigated such problems as the relative effectiveness of television formal course instruction, or the demographic and personality characteristics of the ETV audience. Another provocative direction for research might be the examination of the social psychological impact of general educational television programming as typified by the productions released to the various ETV stations by the ETRC. Such an investigation is reported in this paper.

Subjects were three classes of undergraduate students enrolled in elementary psychology at the University of Houston. The control group did not watch the program; experimental group I was allowed to believe that CBS was presenting the program; experimental group II was allowed to believe that the program originated from KUHT-TV, the University ETV station.

An attempt was made, using the above groups, to evaluate the impact of an ETV program entitled "Puberty in Girls." This film compared the reactions of three different cultures with respect to the psychological onset of puberty in girls. A Negro professor narrates

the message while Negro college students illustrate the context with modern or symbolic dancing and music.

Within this research design, the following hypotheses were formulated:

1. Attitudes toward a group of eleven typical concepts represented in the program would change in a significantly more favorable direction as a result of viewing this program.

2. Highly dogmatic individuals would resist changes in attitudes to a significantly greater extent than individuals who were relatively less dogmatic.

3. The program when presented as from a source of communication with allegedly high prestige (CBS) would produce significantly greater attitude change than when it is presented as from a source of allegedly lower prestige (the local ETV station).

Results

1. From a series of eleven concepts reflected in the program, statistically significant shifts in attitude in a more favorable direction were found for both experimental groups for the following three concepts: a) "female monthly cycle," b) Negro," and c) "public discussion of puberty in girls."

For concepts a) and c) above, in which significant attitude shifts were found, specificity with respect to the overt message in the program is reflected. This would tend to be consistent with the "topic-bound" variety of attitude change. The fact that a shift in the attitude toward the concept "Negro" was also found suggests that where the original attitude was probably highly crystallized through previous experience, this type of "random target" television program may have at least an immediate impact. However, impacts involving newer associations, such as the concept "dancing as a teaching aid," may be difficult to effect through any *single* educational television program.

2. There were no significant differences in resistance to attitude changes between highly dogmatic and relatively less dogmatic individuals.

3. The group which was led to believe that the program was presented on a commercial network did not record significantly greater attitude changes than did the group which believed it was being presented on the local educational television station.

One explanation for this may be that the former group expected a typical commercial network program, but instead were given a production that deviated sharply from that anticipation. The group who believed the program originated from an ETV station liked the program as a whole more than did the audience who expected a CBS program.

Another possibility suggested is that the very fact that the impact

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of the same program presented ostensibly over an ETV station was at least as great as it was when presented ostensibly over a major commercial television network may be regarded with great encouragement by participants in the educational television movement. In fact, the conception that educational television lacks prestige in the eyes of the viewers may be more imagined than real.

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Series V: Content

6. An Instructional Utility Analysis of 319 Educational Television Programs

By School of Education, Indiana University, Bloomington, Indiana, July, 1958, 237 pages.

This publication is an analysis of programs appearing in the following ETV series:

1. *Art:* 1) American Art Today; 2) Art and Artists: Great Britain; 3) The Arts Around Us; 4) The Finder; 5) Looking at Modern Art; 6) The Painting; 7) People; 8) The Sculpture; 9) Yesterday's Worlds.

2. *Biological Science:* 1) Discovery; 2) Discovery II; 3) Frontiers of the Sea; 4) Nature of Life.

3. *Child Development and Family Relations:* 1) At Home with Your Child.

4. *Elementary Language Arts:* 1) Friendly Giant I-IV; 2) Magic Doorways I-III.

5. *Maternity Nursing:* The Months Before Birth.

6. *Mathematics:* Understanding Numbers.

7. *Music:* 1) Music as a Language; 2) Music for Young People.

8. *Physical Science:* 1) The Atom; 2) The Elements; 3) Frontiers to Space; 4) Heritage, Part II.

9. *Secondary Language Arts:* 1) Books and Ideas; 2) Heritage I: Robert Frost; 3) Man and Laughter; 4) Prospect of Literature; 5) The Quill; 6) Writers of Today.

10. *Social Studies:* 1) Agricultural Policy; 2) America in the Making; 3) America Looks

Abroad; 4) American Political Parties; 5) American Politics; 6) America's Town Meeting of the Air; 7) Before There Was a U. S. A.; 8) The Challenge of Foreign Policy; 9) Decision—The Constitution in Action; 10) The Finder; 11) Hats in the Ring; 12) Not in Our Stars; 13) Of Men and Ideas; 14) People; 15) Point of View; 16) Prelude to the Presidency; 17) The Religions of Man; 18) Searchlights on Delinquency; 19) The World We Want; 20) The Written Word; 21) Yesterday's Worlds.

The items included in the compilation were selected from approximately 800 such programs produced originally for the use on open broadcast on the NET stations. Their original primary purpose was systematic general education and an adult audience was envisaged for most. However, in many instances the subject matter of the programs was directly related to the school curriculum, so these programs have also been surveyed for usefulness as direct teaching tools.

The content of each program is carefully analyzed for grade level, specific use in terms of topic or course, learnings involved, techniques of presentation utilized, questions answered, and follow-up activities recommended.

The programs also were not limited as to type of projection used but are adaptable to three types of use:

1. broadcast educational television.

2. closed-circuit instructional television.

3. audio-visual utilization, e. g., direct classroom projection as sound films.

In addition to content analysis, the purchase price of these programs is included, along with instructions for ordering them.

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Series IV: Audience Studies

25. Educational Television—A Good Competitor?

By Lloyd F. Scott, Audio-Visual Communication Review, *Summer 1958, Vol. 6, No. 3, pp. 213-216.*

Since the commercial television channels also schedule educational or informational programs in addition to "entertainment only" shows, educational television programs must compete with the total production of all commercial channels for attention.

A recent study in the San Leandro California School District gave some indication as to the manner in which programs of this nature are meeting total competition. The experiment was carried out in four randomly selected schools on 456 sixth- and seventh-grade students. The general pattern of the study was to have the children check the programs they viewed, and then validate their responses, and arrange distributions indicating total time per week devoted to viewing programs of an educational character and proportion of total viewing time devoted to such programs. Comparisons of the upper and lower 27 percent of each of these distributors should reveal whether differences exist between children more devoted to educational programs and children less devoted to educational programs on a socio-economic basis.

However, comparisons between upper and lower groups revealed no significant differences due to academic and intelligence characteristics, occupations of parents, person-

al adjustment, social adjustment, leisure-time interests, or in-school interest. This result would seem to indicate that any child, regardless of his educational characteristics or qualifications, is as likely to choose educational programs as any other child. This certainly would be contrary to contemporary educational knowledge and belief.

The answer is found in the competition referred to earlier. The fact remains that programs with these informational and educational qualities were not able to compete with the more standard television offerings. A heavy concentration of children viewed *no* programs from the list considered educational by the experts. It is difficult to account for this quite general pattern. Analysis of the individual viewing patterns revealed very frequently what must be considered a purposeful and determined avoidance of programs of this nature.

In the light of this finding, the author believes that, without some definite and complete camouflage of the educational, the proportion who view these programs will remain small.

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perience in their classes than the pupils in the regular classes.

In conclusion, the authors state that "it may be possible that television can add a new dimension to education and thereby change some of the basic concepts of education itself. Therefore, educators must keep an open mind but proceed cautiously lest they attribute to television more than it deserves, or use it for a function to which it is not suited . . . Television is not a cure-all for education but should be viewed as a powerful tool for broadening the experiences in the classroom. It is only as teachers learn how to use this powerful new tool of communication that it will prove effective in the classroom."

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and costs much less), or to mark multiple-choice questions (mark-sense IBM cards require no human interpretation, and make fewer errors) may not only be wastes of money but represent a degradation of function unbecoming a professional. One of the marks of the professional, whether doctor, engineer, or teacher is that he uses . . . the most *efficient* technique he is capable of. Instructors who restrict themselves to any single method, whether lecturing, class discussion, or any other, *may* be using the most efficient technique for their subject, but as professionals, it is to their own interests as well as that of their students continually to reassess its efficiency, and that means comparing it with other methods."

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type of teacher personality most adaptable to television presentations?

2. How much overt activity should be required of the television audiences?

3. To what extent does involving the peer group in television presentations enhance student interest?

4. To what extent are the student reactions to various types of audio-visual materials used in television teaching valid?

The author would, in the future, insist on the following for television teaching:

1. Extra precautions would be observed to insure unobtrusiveness of the mechanical aspects of television.

2. Whenever possible, some type of responses — whether overt or covert — would be required of the viewer during the presentation.

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Series III: Bibliography

14. Telecourses for Credit

Michigan State University, Continuing Education Service, University of the Air, Kellogg Center, East Lansing, Michigan, Vol. 5, September, 1958, 133 pages.

This compendium lists telecourses taught in 1958 at 117 institutions including 53 universities, 34 colleges, five institutions, 20 public schools, three ETV networks, and two state departments of public instruction. This represents a total of 464 courses during 1957-58 or an increase of 112.6 per cent over total listings for 1951-1957.

This increase was particularly marked in the areas of social science, physical science, mathematics, language, business, and English grammar. Social sciences represent a little more than 19% of all telecourses offered; English 13.8%; physical science 12.9%; mathematics 6.8%; foreign language 6.4%; business 4.8%. The Russian language, not previously listed, was offered in five telecourses this year. Latin had one such listing. No increase was shown in home economics and agriculture, which together represent a little more than one per cent of the telecourse total. Typing, shorthand and accounting increased sharply, but fewer courses were available in art, music, psychology, and speech.

The administration of televised education was diverse. Thirty institutions placed the responsibility in Extension, 23 centered responsibility in the departments in cooperation with Extension, 19 relied upon television, four on deans of

colleges, two on audio-visual departments, and others on one or another of the chief administrators of the school.

The addresses of television personnel in charge of the programs at each school are listed, followed by a listing of

1. the name of the school and TV station,
2. course title and when offered,
3. credits,
4. enrollment,
5. regular staff or special staff used,
6. compensation time ratio,
7. money,
8. administration,
9. course fee.

Appendix I lists the addresses of the State Departments of Education and persons to whom inquiries regarding TV may be addressed, and Appendix II reports on organized viewing groups.

In connection with the latter, although nearly everyone recognized the advantages of the development of organized viewing groups for viewing courses in the Liberal Arts, little more than discussion of this plan has occurred. However, 13 institutions have or are making definite organizational plans for such groups, six provide training for leaders or instructors to "follow up" on classes in the community, 18 furnish special materials in the content areas, 23 carry on active cooperation with other institutions, TV stations, and community groups, and 15 have in one way or another worked out a temporary plan for financial support.

Financial help for these groups was chiefly provided by the institutions for instructional staff and production costs, by the station for station costs, by community groups contributing for special programming, and most predominantly by funds from one or another foundation.

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sofar as learning of subject matter was measured by the tests used.

However, the tests did not measure the development of wholesome attitudes, problem-solving ability, good human relations, etc. Whether pupils in television classes did equally well in such areas is not known. It is possible that more time and effort was spent on developing television lessons than was spent on developing direct classroom teaching lessons and this may modify the above conclusion.

2. On the listening tests experimental classes scored lower than control classes with the exception of the American literature classes and the second semester grade 8 science class. However, the results on the listening tests were not the primary concern of the evaluation program, although listening plays an important part in learning by television.

3. Teacher evaluations showed that as the year progressed the quality of teaching in the television lessons improved considerably, although a number of teachers reported that students lost interest in the last few months. This was attributed to a "wearing off of the novelty" of television instruction. These same teachers have the feeling that such instruction, especially at the high school level, should be limited to one semester.

4. Both teachers and pupils mentioned the opportunity for presenting a lesson without interruption. The lesson on television is carried through to a conclusion without interruptions from any source. There is very little repetition. As students learned this fact, their listening and viewing habits improved greatly.

5. A number of teachers reported that tardiness and absences seemed to be lower in the television classes than in other classes.

6. One of the factors mentioned again and again as a weakness of television teaching was the reduced opportunity for face-to-face teacher-pupil contacts. Closely related to this was the factor of insufficient time for class discussion.

7. Teaching larger-than-normal groups by television gave results on subject matter tests that were equal to the results achieved by smaller classes with their regular teachers, and, in some cases, gave results that were better.

8. Pupils in the experimental group in American literature, grade 11, learned especially well by television as indicated by their achievement on both subject matter and listening

tests. Perhaps their greater maturity made them more attentive to the telecast lessons, and perhaps listening is more closely associated with American literature instruction than with instruction in other subject-matter courses.

9. The third grade elementary school children achieved good success in the conversational Spanish experiment. However, whether teaching Spanish could be done more successfully by teachers using the conventional method has not been determined by this experiment.

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Radio-Television
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Annotated by Dr. Eleanor Blum

Journalism Librarian, University of Illinois

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Essays on problems and experiences in professional writing by members of the Writer's Guild of America. Discussions include the transition of screen play into novel, the techniques of the Western and the mystery, the Hollywood and New York market.

Can TV Improve College Teaching?

Continued from page 16

objective final examination. Attitudinal learning was measured by a pre and post administration of the standardized *Minnesota Teacher Attitude Inventory*, and by a forced preference scale devised to measure pre and post attitudes toward teaching as a profession.

In comparing the performance of the control and experimental groups on the final examination, the experimental groups produced a higher mean score, though this was not statistically significant.

A comparison of performance of the control and experimental groups on the pre and post factual test revealed a slight gain in favor of the control group. This gain was not statistically significant.

Both control and experimental groups increased their learning. Statistical methods proved this gain not attributable to chance.

On the basis of the statistical differences between mean gains, it cannot be said that significantly more factual learning took place in the television group than in the non-television group. From the standpoint of factual learning alone, therefore, the hypothesis that television teaching would be superior was not tenable.

In the area of attitude change, the difference is markedly in favor of the group taught visually. Whereas the control group made a pre-post test gain of only 13 points on the *Minnesota Teacher Attitude Inventory*, the experimental group increased its score 22.2 points. This is significant at the .001 level. Upon this basis it is logical to reject the hypothesis that more learning takes place in the conventional face-to-face classroom.

In the final examination the small experimental class had a raw mean score one point below the large experimental group. The pre-post test showed a slight drop on the part of the small visualized group. This would indicate that factual learning was no greater due to small class size. Attitude change in the small group, as reflected in the *Minnesota Teacher Attitude Inventory*, showed less gain, thus giving further evidence in favor of accepting the second hypothesis, that visualized instruction would be unaffected by group size.

From information gathered by means of several anonymous questionnaires, it was learned that students in the Education I class favored, almost unanimously, film learning over televised chart learning. Charts with considerable detail both obligated and encouraged note taking, which many students accepted as useful but tedious. Portions of the course (and visuals used in these portions) which dealt with foundational concepts and current problems in education were strongly favored over administrative and organizational concepts.

ETV Considerations

Continued from page 15

bution, is changing. Bringing the product, education, to the consumer via television, is a revolutionary event. The memo points out that by studying current experiments, it is possible to judge the potentialities of this medium.

Section 3.000 covers some potentials of ETV. Its strength lies not only in expanding in-school facilities, but in interpreting its potentialities to the general public. Teachers can be closer to students; television puts the instructor closer to thirty students watching TV than to hundreds sitting in an auditorium. The medium can bring the world into the classroom, where formerly only time-consuming and costly field trips were feasible; it can fill vacuums of learning, such as in the social sciences, by presenting films of cultures, societies, and groups for maximum educational impact. Similar uses may be applied to courses of instruction in which TV can be utilized effectively to enlarge and explain.

The master teacher plan may provide the key to improving existing techniques and methods of teaching. ETV is not only a method of combating a growing teacher shortage, but offers an intimate, visual, stimulating, and revolutionary dimension to education.

Section 4.000 deals with academic considerations. Changing technology will place new demands upon teachers, and they should become familiar with the characteristics, limitations, changes, and potentialities of these newer methods of teaching. Some subjects will lend themselves to television, while others may not. In cases where lecture methods are employed, electronic aids will be no challenge to transition and can be adapted easily.

Exceptional teachers will be able to disseminate their methods and techniques via TV, and impart their experience and learning to classes and teachers simultaneously. Along with improvement of academic achievements of students comes the tremendous possibility of improving teacher-training methods.

Section 5.000 of the Memo deals with "education of the educators." Educational television is one of the best ways to convert technological gains into social gains. It is mentioned that electronic aids to education are not threats to technological unemployment of teachers, but instead, offer a means of appreciably enhancing teacher recognition and position. Many teachers fear ETV, and dislike the idea of exposing their teaching methods to their peers, employees, and citizens. This would not be difficult for the superior and well-rounded teacher, and would improve the overall level of instruction generally. TV can provide continuing ed-

ucation and professional growth for teachers, and offer courses for credit, as found in several systems in the country, and in state-wide applications.

Section 6.000 examines costs of electronic aids to education. It is difficult to determine an average or general trend in costs, due to the lack of adequate data, variance between records, hidden costs, and newness of the medium, which boosts initial costs. Some indication is given by the Fund for the Advancement of Education. A course in elementary psychology at Pennsylvania State University which normally costs $23,000 was broadcast on ETV at a cost of only $15,000. But the significance is seen on a "cost per student" basis in a specific example. Although varying according to course, one instance showed a cost of $4.80 per student by regular methods and $2.72 for television teaching, which, in addition to being cheaper, can help accommodate more students, reduce teacher load, and improve quality. Also, the possibility of filming courses of instruction for further showing reduces the cost per student, while increasing the number of students per superior instructor and increasing the teachers available for supervision and special counselling.

Section 7.000 covers building and classroom facilities. This composes about thirty percent of the report. Although more pertinent to board members, the section covers in great detail even the most minute piece of apparatus, and serves to remind the reader that more details provide a better base for operations.

Mr. Morris points out that electronic aids may provide other advantages in addition to direct total teaching. Films may be used when needed without time - consuming shade-pulling, setting up projectors, etc. Close-ups will provide immediate blow-ups for class examination of small pieces, mechanisms, or experiments for maximum impact at the press of a button. TV may provide the school with a public address substitute, but more important, allow viewing of effective teaching techniques by other teachers and teacher education programs.

A classroom monitor set-up is designed for dual set operation in the first instance. The sets are placed to serve from 20 to 25 students, and placed so as to avoid "gaze drift" from one set to another. Other considerations, such as lighting, acoustics, power outlets, conduit channeling, and monitor jeeps, are discussed in detail. A single set lay-out is also included.

Two methods of closed-circuit operation are proposed here: RF composite signal distribution to sets capable of regular ETV reception on channels not normally used for broadcasting in the area, and video distribution over cable-fed converted-video receivers.

Section 8.000 examines types of programs which have been developed for ETV. Most effective early efforts were for adult education programs and community, youth, and occupational-vocational offerings. Others were designed for specialized groups, and included parent education, high school credit,

and homebound courses. Some programs supplemented in-school schedules, while others provided out-of-school education.

One type of program requires a classroom or in-training teacher to be in every room during ETV classes to maintain discipline and provide individual help. In other cases, the students are combined in larger classes, allowing teachers to be redeployed into other areas. ETV will increase, not decrease, the need for well-qualified teachers.

Many places in the country have commercial television stations supplying time to school systems for regular classroom applications. A few stations have developed elaborate co-ordination setups between persons with broadcasting backgrounds and school consultants.

The Educational Television and Radio Center is an organization which develops and coordinates program material for ETV stations throughout the country via a kinescope network. The advantage is that adequate production is achieved that would not be possible within a closed-circuit in-school operation, and made more effective over larger areas.

Program scheduling within an open-circuit operation is difficult. There is the problem of fitting individual class programming into station program schedules. Closed-circuit television is usually easier to tailor to individual school needs.

Section 9,000 of the report deals with problems of ETV. In some areas which are unable to support ETV, time must be found on commercial stations to meet educational requirements within existing and changing schedules. High initial costs, operating expenses, and technical problems will have to be met in the best possible manner. Feedback, or two-way interplay between teleteacher and telestudent will have to be developed. Teachers must learn new techniques and methods to utilize television to the best possible advantage. And better methods for storing information, courses of instruction, and visual presentation of subject matter will have to be perfected.

Predictions of what ETV can do, found in section 10,000, must include the provision that it be viewed as a neutral carrier, providing impetus for the ingenuity of educators, and magnifying manyfold the effectiveness of the good instructor. In the words of T. C. Pollock of New York University, " . . . it now seems clear that television offers the greatest opportunity for the advancement of education since the introduction of printing by movable type . . . . " TV has shown unusual powers to attract student interest in higher concentration than ever before.

Electronic aids to education cannot be a panacea in themselves. ETV cannot be a substitute for quality or quantity of instruction, nor can it succeed unless it can bridge the gap between communications and our schools and citizens: an outcome which board members will need to consider very carefully if they are to provide the best learning and teaching environments consistent with their resources.

Homework vs. TV

Continued from page 8

stand is, we have learned that it's a dance program with kids having a swell time dancing, themselves.

In Table C also are shown the second, third, fourth, and fifth choices, programs that achieved those respective positions in the balloting of the individual students of the respective grades.

The domination of "westerns" may be shown also by comparing the positions, first, second, etc., voted the respective types of programs by the respective grades. The dance program offers more competition than any of the other types. For comparisons, see Table D.

To avoid repellency because of "too many questions," the questionnaire did not ask the student how he divided his time among the several kinds of programs.

As to viewing of programs on the educational station KTCA-TV, the questionnaire asked: "Do you watch the educational station: Never? Occasionally? Regularly?" Only one pupil said he "regularly" watched KTCA, 123 said they did "occasionally," and 247 said "never." This does not include certain uses of KTCA during school hours.

KTCA has been in operation less than two years—it was dedi-

TABLE C

Favorite Programs

Listed in order of preference (first, second, third, fourth and fifth), as summarized from the questionnaires of each grade, 7 - 12 inclusive

Grade	*Programs in order of Preference*
7	Rifleman, Maverick, Gunsmoke, Red Skelton, Sports.
8	Maverick, Dick Clark, Gunsmoke, Rifleman, Red Skelton.
9	Maverick, Dick Clark, American Bandstand, Gunsmoke, Have Gun - Will Travel.
10	American Bandstand, Dick Clark, Ozzie and Harriet, Maverick, Have Gun - Will Travel.
11	Maverick, American Bandstand, Ozzie and Harriet, Dick Clark, Have Gun - Will Travel.
12	Gunsmoke, Maverick, American Bandstand, Sea Hunt, Have Gun - Will Travel.

TABLE D

Types of Favorite Programs

	First	*Second*	*Third*	*Fourth*	*Fifth*
Westerns	5	2	2	3	4
Dance	1	4	2	1	
Family			2		
Adventure				1	
Sports					1
Comedy				1	1

cated September 15, 1957. Rightfully, it may be expected to increase its viewership among the on-coming school generations as it enlarges its areas of service and capitalizes on its opportunities of making itself known through established classroom audiences.

Now what does this report on one high school among the thousands in America show? Superintendent Anderson readily concedes that the above results "are perhaps no different from those that could be obtained from a national survey."

But though these figures are for only one high school of many, they *are* tangible, and they *do* point the way. One practical question they raise, and in so doing indicate an answer, is this: Does television interfere with homework or sleep? The average number of hours spent in school is 6½ hours daily, or 32½ hours weekly. Obviously, "something has to give," something has to be sacrificed when a seventh grader spends 60 hours a week before a TV set, or a ninth grader 62 hours, or an eleventh grader 45 hours, or a senior as many as 42 hours.

The above are the extremes and yet thirteen seventh graders out of the 77 reporting did spend 33 hours or more viewing TV in the week—that's more hours before the TV set than they spent in school. But five in that class of seventh graders did not watch TV at all. (Perhaps in those particular homes there were no TV sets.) In the eighth grade, eleven students viewed TV 33 or more hours a week, with two not watching it at all. Hours spent before the TV set decrease, even among its staunchest devotees, as the student progresses through the grades, only nine students of the ninth grade viewing it for 33 hours or more, three in the tenth grade, four in the eleventh grade, and one in the twelfth grade. But that one twelfth grader spent 42 hours watching TV in one week. Parental

control of the TV set in the home is one suggestion, yet parental control over our children has hardly been on the upswing recently.

As Mr. Anderson said in the summary of his questionnaire, "There is no question that television is exerting a powerful influence on anyone who views it with any degree of regularity." Parents who see in some "westerns" and many crime shows a disregard of basic values in living, likewise a disregard for human life, and an actual education in crime, are opposed by others who insist that the kid, if trained properly at home, doesn't go out and snatch a purse or shoot up a tavern.

Yet a good many kids are doing something like that, as the perusal of any daily newspaper for a week will show. There are 50,540,000 TV sets in American homes today, and it is very likely that no home in Mahtomedi will be without one, if not more than one, by next Christmas. Also, almost any juvenile court will show that juvenile delinquency is not decreasing.

Further, it is very true that the average village or community street is silent these evenings, unusually silent if compared with a decade ago. Why? For one reason, the kids are at home watching TV when they used to be outdoors playing or rollicking, and sometimes they were engaged in outdoor mischief if not devilment. Were they better boys and girls then than now?

One can break open an argument or renew an old one wherever educators and parents and business men and advertising and public relations men and women meet. And the lines cannot be sharply drawn, for representatives of each of these broad and interested groups may be found in both camps.

It is undoubtedly true that not only educators but all of us, all Americans, are only now beginning to realize what a powerful means of communication we have in our homes, a means of communication we have only begun to learn how to use. Maybe that use, as we develop it, will see one picture or drawing or pictograph (didn't the Chinese do it first?) supplanting a hundred or a thousand words, as has been echoed in maxims for so long. This to keep up with the times! And maybe the Ten Commandments will be inculcated subliminally (to use an abominable word), whether with better results it is not for us to forecast. Yet under the heading "juvenile delinquency" now are being dumped a great many activities, misdemeanors, even crimes, that always have been with us.

But present question-raising is all to the good: it shows that educators and parents are far from somnolent over advantages and disadvantages confronting their children through TV. The experimental work going on to enlarge the use of the medium can be continuously broadened; it is, indeed, a good field for ever-widening use of foundation funds and grants, amid the blessings of all of us interested in these wonderful kids, kids whose elders may be even more befogged than the kids themselves.

Radio: Marvel or Monster?

Continued from page 5

it would seem that there is a great future in the specialized program beamed to relatively small specialized groups on commercial or educational radio.

This has always been the case with educational radio. Educational radio, and here I speak merely from observation, seems to have trouble with making programs attractive enough for the borderline person who is torn between a desire for entertainment and some time-passing interest and real education. The fellow who is seeking knowledge, who is out to get an education, will get it. He will seek and learn from radio or any other source which is available; but there are too few people like this. It seems to me that perhaps we have not promoted our educational radio in a way which would build up those "voluntary captive audiences" which are essential if educational radio is worth the expense and the trouble. I know we can quote the statistics on costs and show how cheap it is to reach 5000 over radio when we only reach 100 face to face, but *do* we really reach the 3000 or 5000 even if they have their radios on and are listening? Some studies which have been made seem to question that pretty seriously. On the other hand, I think its about time to quit conducting researches into the question of whether people can learn by radio. The answer is and has been for years a resounding *yes* without the slightest question or doubt.

What I should like to see is some research and experimentation on "the kinds of programs, the kinds of promotion, the invisible factors which enter into an individual's acceptance or rejection of educational radio." What are the things which radio may do to attract people to an educational subject and keep them? Surely the potential in radio for stimulation, for attracting attention, has not been used either wisely or effectively.

Certainly the noise we hear in commercial radio today is not the way. In my humble opinion, commercial radio, after coming out of the grave pretty vigorously a few years after the real impact of television hit it, is now digging its own grave with the perfectly savage noise and hysteria that rolls out of the average set. Educational radio hasn't very much to learn from commercial radio in my book unless it is what *not* to do. The idea that one can sell education or learning like soap or cigarettes is one of the great fallacies which the Madison Avenue boys have tried to convince us is truth. When you are selling cigarettes or beer to a mass audience, you are selling a *thing*. When you promote or sell learning, you are not selling something one can reach out and get off a counter; most of the reaching is done inside the man or the woman.

I'm not much concerned about use of radio in classroom teaching, though it seems to me that radio drama, travelogues and sheer information presentation, in terms of time and space, are almost unlimited in possibilities. We think the big area is in adult education, or the re-education of functional illiterates in this country who have had the blessings of a high school or a university education but who have not found any meaning in what they learned in college for what they do now. At a time when the 40-hour week is standard and the 30-hour week is an actuality in some industries and vocations, we are overloaded as a nation with the commodity of leisure. With hordes of older people in retirement and often looking for something to fill their time other than merely sitting out and drying up, with swarms of youngsters in the cities and the suburbs with absolutely nothing to do but to get into mischief, this radio, along with television, is designed to play an even more significant and important role in the lives of people.

The right sorts of radio programs give wings to the imagination as no other medium, print, live drama, motion picture, or television, has. Why not make more use of them? Sometimes the reality is less exciting than the imagined reality. What other medium can give you in reality the picture which Orson Welles' famous program on the invasion from Mars gave a nation? What reality can equal Ed Murrow's word pictures, which filled you in on the burning of London in the blitz, or the shambles which Fibber McGee's closet makes in your own mind? Here is audience participation to a high degree. Only too rarely do we hear much of that on educational radio. I do see in the future of educational radio a magnificent opportunity, by stimulating and imaginative use of it, to move great masses of Americans who have been wanting to explore, re-examine, and taste again of the stream of learning but who up to now have not quite been able to move into the stream. We think radio occasionally can provide the sparking charge which can set off reaction. Here we think is the great unused field.

Most of the things we have said about educational radio we can say about educational television. Educational TV programs *can* be interesting and exciting—but most of them *are* terribly dull.

In classroom teaching TV probably excels radio, since it uses a double channel to the mind. I assume, and I think research pretty well bears this out, that the combination of sound and sight comes nearer duplicating a classroom situation so far as presentation is concerned than anything in the whole cabinet of gadgets. Here again I hope we will quit fumbling around so much as to whether or not people can learn, or teachers can teach, via television, and concentrate on those elements in the medium which make it better adapted than other media to getting an idea from one person to another.

Now for something specific to supplement the generalizations in which I have been indulging. As

some of you probably know, the National Project in Agricultural Communications has joined with the NAEB office at Urbana in financing a study of the existing research in both commercial and educational radio. The purpose of this study is to bring together, evaluate, and analyze the essential facts which the vast amount of research over the past thirty-five years has gathered about the nature of radio and what it can or cannot do.

This study is being made under the direction of Dr. Harwood, University of Southern California; and while the study is not complete, I asked Dr. Harwood to pass on to me, in a tentative way, some of the things which the final study and monograph will likely highlight. Here are a few of his observations:

1. *There is no question that radio can be used successfully in the classroom education of children and adults.* The Wisconsin Research Project in School Broadcasting, involving nearly 300,000 children and covering subject matter such as music, nature study, geography, English, literature, and speech, showed that broadcast presentations produced neither significantly more learning nor significantly less learning than the conventional presentations. Similarly, studies such as that by Heron and Ziebarth tend to show that there are no significant differences between the information learned by adults from radio and that gained through face-to-face presentations.

2. *Radio may be used to inform people about a vast variety of subjects.* There may be questions of "how" and "how much" but there seems to be no question about the fact that people are informed by radio to *some* extent. The research of Lazarsfeld, Cantril, Stanton, and many others suggests that people learn many things, ranging from news to hobbies.

3. *Radio may be used successfully to change attitudes and opinions.* There's lots of "proof" in the work of Power, Wilson, and many others.

4. *Radio may be used with success in stimulating overt action.* Mersand and Lazarsfeld, for example, found that radio stimulated book reading. Lyseth reported that radio programs have stimulated building construction, university course-offerings, and increases in the faculties at educational institutions. H. P. Smith reported that more than 900 dresses were made by women who followed a radio program on dress making.

5. *The relative newcomer, FM, seems to favor the "upper crust."* Generally speaking, FM audiences are above the average in education, income, and social status; they tend to favor "serious" broadcasting; they read more books, are more liberal in their political views, and tend to hold their opinions more strongly than the average. Above all, FM demonstrates that it can pay to talk to special groups about special things, that every program does *not* have to be for everybody, and that a radio station *can* avoid trying to have something for everybody.

Book Review

Continued from page 10

texts. It is smaller and handier, but like the others, more than half of it consists of perforated practice material which, when torn out for use, results in copy that is considerably smaller than the standard $8\frac{1}{2}$ x 11 inches. It should be noted, in this practical context, that Hyde makes LP records available for purchase as an adjunct to the chapters on pronunciation.

In short, Hyde's text is probably one of the most fertile of traditional texts; but the field of performance activity in broadcasting must still await a radically new and really enlightening approach—one which will make more use of the potential relationships with hitherto untapped areas of information. The text is still essentially an artistic description of the field rather than a potent, scientific, explicative analysis.

—GEORGE GUNKLE

Recent NAEB Publications

High School Radio and Television Curriculum Guide, Ethel F. Tincher, Edward Stasheff, Edgar E. Willis, 40 pp. $1.00.
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